United States Department of Agriculture

NRCS

Natural Resources Conservation Service, 100 USDA, Suite 206, Stillwater, OK 74074-2265 (405) 742-1256

July 30, 2004

OKLAHOMA BULLETIN NO. OK210-4-13

SUBJECT: ENG – Nozzle Spacing on Center Pivot and Linear Sprinklers

Purpose: To provide planning guidance for center pivot and linear sprinklers.

Expiration Date: September 30, 2004

Conservation Practice Standard (CPS) 442 – Irrigation System, Sprinkler, outlines criteria for various sprinkler nozzle configurations. These include the height of the nozzle from the ground and the spacing between nozzles. The goal is to provide a uniform application of water across the entire field.

Cost share is available through the Environmental Quality Incentives Program (EQIP) to convert irrigation systems to more efficient systems by re-nozzling (conversion) the existing system or by installing a new low pressure sprinkler system on previously surface irrigated land. The cost share amount is based on the number of drops on which the nozzles are installed. This has led to some irrigation dealers planning systems with closely spaced nozzles which require more drops thereby potentially increasing the total cost share amount paid to the farmer. This design will meet criteria set forth in the standard, but it is not practical nor is it economical.

The minimum spacing for nozzles on any sprinkler system is 5 feet. This is based on a 30-inch row spacing and applying water in alternate furrows. Regardless of the crop being grown (row, drilled, or grass), nozzle packages can be developed to adequately meet the uniformity criteria in CPS 442 with a 5 foot spacing. The standard is currently being revised and will reflect a minimum spacing.

In addition, the revised standard will waive the maximum spacing requirement for nozzles from the pivot center to the first tower. Due to slow movement of nozzles close to the pivot center and limitations on nozzles sizes, it is often difficult to get uniform applications with conventional spacing. Therefore, nozzles may need to be spaced further apart and the size or type of nozzle changed to efficiently water this area. This bulletin shall suffice as a general variance to the maximum nozzle spacing from the pivot center to the first tower until the standard is revised.

District conservationists will need to take appropriate action to communicate these criteria to all existing contract participants installing or converting irrigation systems under EQIP. Anyone certifying the completion of a system shall document the actual nozzle spacing installed. Cost share shall be based on the actual number of drops installed that meet or exceed the 5 foot minimum spacing.

/s/ Leslie R. Conner, acting

M. DARREL DOMINICK
State Conservationist

DIST: AE